Four-pole and Two-pole Impedance Measurements by the Method of Switching Two Resistances

well as passive circuits. In Ref 1 the input impedance of a cathode follower has been measured thus. By adding a third resistance as in Fig 2 the input impedance of two-poles may be measured. The instruments employed are: source 3G; indicator 28-I. There are 2 figures and 1 English reference.

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnical Institute)

SUBMITTED: April 19, 1958

44346
S/142/62/005/006/009/011
E192/E382

24.24.0

AUTHORS: Bondarev, A.S. and Semenov, G.F.

TITLE: Approximate calculation of the electric field in a low-permittivity dielectric

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 5, no. 6, 1962, 734 - 736

TEXT: An approximate expression for the relationship between the amplitude of the perturbation field in the volume of a dielectric and that of the non-perturbed field is derived.

If the dielectric is in the form of a thin plate which is parallel to the lines of the electric field $\vec{E}_o$, it can be assumed that the amplitude of the field inside the dielectric will be approximately equal to that outside the dielectric. On the other hand, if the plate is positioned perpendicularly to $\vec{E}_o$, the amplitude of the field in the dielectric is approximately reduced $\varepsilon/\varepsilon_o$ times, where ε_o is the permittivity of vacuum. In the general case, the vector of the electric field has a normal

Card 1/3

component E_n and a tangential component E_τ. The components of the field inside the dielectric are therefore $\varepsilon_o E_n/\varepsilon$ and E_τ. The coefficient δ' representing the ratio of the absolute value of the field in the dielectric to the absolute value of the field outside the dielectric on its boundary can be expressed as:

$$\delta' \sqrt{E_n^2 E + E_\tau^2} = \sqrt{\left(\frac{\varepsilon_o}{\varepsilon} E_n\right)^2 + E_\tau^2} \qquad (1).$$

An average coefficient δ for the electric field inside the dielectric is obtained by integrating Eq. (1) over the surface area S of the dielectric. This is expressed by:

$$\delta = \frac{\int_S \sqrt{\left(\frac{\varepsilon_0}{\varepsilon} E_n\right)^2 + E_\tau^2}\, ds}{\int_S \sqrt{E_n^2 + E_\tau^2}\, ds}. \qquad (3)$$

Card 2/3

Approximate calculation ....

so that the amplitude of the field inside the dielectric is given by:

$$\vec{E} = \delta \vec{E}_o \qquad (4) .$$

The use of Eqs. (3) and (4) does not result in an error greater than 3% for the dielectric with relative permittivities of up to 1.4. However, the error becomes 27% in respect of permittivities of 2.6. There is 1 table.

ASSOCIATION: Kafedra elektronnykh i ionnykh priborov Kiyevskogo ordena Lenina politekhnicheskogo instituta (Department of Electronic and Ionic Devices of Kiyev "Order of Lenin" Polytechnical Institute)

SUBMITTED: March 16, 1962

Card 3/3

S/142/62/005/005/007/009
E140/E135

9,4230

AUTHOR: Bondarev, A.S.

TITLE: Calculation and measurement of the coupling impedance between a helix and coaxial dielectric tubes

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v.5, no.5, 1962, 630-639

TEXT: Formulae are derived for the coupling impedance and dispersion of helices with coaxial dielectric tubes for cases where the radial propagation constants are not equal in regions filled by different dielectrics. While in the physical case the helix may be in contact with the dielectric tube, in the derived system a gap is introduced equal to the radius of the helical conductor. Measurements were carried out using probes with high-impedance leads. Comparison with calculated values and analysis of the results show the following: the coupling impedance is reduced by the dielectric supports, which should enclose a minimum of turns of the helix; the dielectric can be shaped to broaden the frequency band, by reducing the dispersion; the accuracy of calculation and of measurement are equivalent, giving an error of

Card 1/2

VB

the order of 15-20%. An appendix lists symbols for certain combinations of Bessel functions used in the text to shorten the notation.
There are 3 figures.

ASSOCIATION: Kafedra elektronnykh i ionnykh priborov
Kiyevskogo ordena Lenina politekhnicheskogo instituta
(Department of Electronic and Ionic Devices of the
Kiev Order of Lenin Polytechnical Institute)

SUBMITTED: February 13, 1962

Card 2/2

BONDAREV, A.S.; SEMENOV, G.F.

Approximate calculation of an electric field in a dielectric with low specific inductive capacitance. Izv.vys.ucheb.zav.; radiotekh. 5 no.6:734-736 N-D '62. (MIRA 16:1)

1. Rekomendovano kafedroy elektronnykh i ionnykh priborov Kiyevskogo ordena Lenina politekhnicheskogo instituta.
(Dielectrics)

BAKHRUSHIN, V.A.; BONDAREV, A.Ye.; PRIKHOZHAN, A.Ye.; YAKIMOV, P.I.

Overall mechanization of the assembling of structural elements. Prom. stroi. 41 no.2:17-20 F '64. (MIRA 17:3)

1. Trest Volgogradorgstroy (for Bakhrushin, Prikhozhan). 2. Upravleniye Yuzhstal'konstuktsiya (for Bondarev). 3. Gosudarstvennyy institut po proyektirovaniyu, issledovaniyu i ispytaniyu stal'nykh konstruktsiy i mostov (for Yakimov).

BONDAREV, A.Ye.; YAKIMOV, P.I.

Rapid assembly of the electrolysis buildings of an aluminum plant. Prom.stroi. 40 no.8:11-16 '62. (MIRA 15:11)

1. Upravleniye Yuzhstal'konstruktsiya (for Bondarev). 2. Proyektnyy institut Promstal'konstruktsiya (for Yakimov).
(Aluminum plants) (Precast concrete construction)

SHATALOV, V.P.; GOSTEV, M.M.; KRYLOVA, I.A.; ARTEMOV, V.M.; SHESTAKOVA, O.G.; KORBANOVA, Z.N.; SLUKIN, A.D.; SOTNIKOV, I.F.; TORBINSKIY, A.N.; Prinimaoli uchastiye: PASYNKOV, N.V.; BONDAREV, A.Ye.; GERGASEVICH, T.V.

Carbon black filled and oil extended butadiene-styrene rubber obtained by low-temperature polymerization. Kauch.i rez. 22 no.4:1-5 Ap '63. (MIRA 16:6)

1. Voronezhskiy zavod sinteticheskogo kauchuka i Voronezhskiy shinnyy zavod.

(Rubber, Synthetic)

L 41001-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM S/0081/64/000/022/S064/S064

ACCESSION NR: AR5005649

SOURCE: Ref. zh. Khimiya, Abs. 22S458

AUTHOR: Shatalov, V.P.; Gontev, M.M.; Bondarev, A.Ye.; Pasynkov, N.V.

TITLE: Alumina-filled rubber prepared by low-temperature polymerization

CITED SOURCE: Tr. Labor. khimii vysokomolekul. soyedineniy. Voronezhsk. un-t, vyp. 2, 1963, 83-102

TOPIC TAGS: synthetic rubber, low temperature polymerization, rubber filler, alumina filler, Gamma alumina, microcrystalline alumina, rubber plasticity, rubber strength, silica gel, rubber wear, carbon black/SKS-30 rubber, HAF carbon black

TRANSLATION: A sample of Al_2O_3 containing 94-99% of the γ-form was obtained by decomposing $Al_2(SO_4)_3 \cdot 18H_2O$ in an electric furnace at 900-1100C with a gradual increase in temperature. The grain size of the microcrystalline aggregates of Al_2O_3 was 0.05-0.1 mm, the index or refraction was 1.754-1.756, the surface pH was 5-9, and the density of the dry powder was 12-13 g/100 cc. The adsorptive capacity of this Al_2O_3 was higher than that of silica gel. The absorption of moisture during storage for

Card 1/2

L 41001-65
ACCESSION NR: AR5005649

2

50 days in air was ≤ 3-5%. This γ-Al_2O_3 was added on the rollers and into the latex of SKS-30AR and SKS-30ARK rubber. The plasticity of SKS-30AR decreased less when alumina was added to the latex than when it was added on the rollers; the modulus, hardness and elasticity of the vulcanizates were also lower. When alumina was added on the rollers, the vulcanizates had a strength which was close to that of rubber with HAF carbon black and higher than after the addition of silica gel, as well as having a greater elongation at break and residual elongation and a lower modulus. The wear of rubber containing γ-alumina was equal to that of rubber with silica gel and less than that with HAF carbon black. When γ-alumina was added to the latex of SKS-30AR, the strength of the vulcanizates was somewhat higher than when it was added on the rollers, but the remaining properties were practically the same. The normal degree of filling with γ-alumina is 30-40% for SKS-30ARK and 70-80% for SKS-30AR. A. Sh.

ENCL: 00 SUB CODE: MT

2/2
Cord

BONDAREV, B. (Ukhta)

Let's train, support and teach. Okhr.truda i sots.strakh. 6 no.1:26 Ja '63. (MIRA 16:1)
(Komi A.S.S.R.--Lumbering--Hygienic aspects)

L 13305-66 EWT(1)/EWP(m)/EPF(n)-2

ACC NR: AP6002299 SOURCE CODE: UR/0141/65/008/006/1155/1159

AUTHOR: Bondarev, B. I.

64
B

ORG: none

TITLE: Induced radiation with high photon densities

SOURCE: IVUZ. Radiofizika, v. 8, no. 6, 1965, 1155-1159

TOPIC TAGS: laser, ~~photon absorption~~, photon emission, gas laser, photon, electron

ABSTRACT: The nonlinear effect of two-photon emission of stimulated radiation is analyzed by means of the third-order perturbation theory. It is shown that as the density of photons is increased the perturbation theory analysis of interaction of photons with electrons becomes invalid and should not be used. In the case of a 0.5W gas laser, with a density of photons $\approx 10^{10}$ photons/cm^3, the probability of two-photon emission per unit time is equal to that of one-photon emission. Orig. art. has: 2 figures and 17 formulas.

[03]

SUB CODE: 20/ SUBM DATE: 30Aug63/ ORIG REF: 001/ OTH REF: 004 ATD Press: 4188

Card 1/1

UDC: 537.533.2;621.378.325

L 19754-63 EWP(k)/EWT(1)/EWP(q)/EWT(m)/EWP(B)/BDS AFFTC/ASD/ESD-3/IJP(C)
ACCESSION NR: AT3001943 Pf-4 JD S/2912/62/000/000/0410/0419

AUTHORS: Chukhrov, M. V.; Sokolova, A. I.; Oreshnikov, Z. A.; Milyayev, B. F.; Gur'yev, I. I.; Bondarev, B. I.; Lukovnikov, Yu. D.

TITLE: Study of the effect of an electromagnetic field on the crystallization of light alloys

SOURCE: Kristallizatsiya i fazovyye perekhody. Minsk, Izd-vo AN BSSR, 1962, 410-419.

TOPIC TAGS: crystal, crystallization, crystallography, light,alloy, electromagnetic, field, magnetohydrodynamics, electromagnetohydrodynamics, electrodynamic, macrostructure, Al, Mg, A-00, MA-8, microstructure, strength characteristics, mechanical properties.

ABSTRACT: The paper describes an experimental investigation of a special effect of an electromagnetic field, namely, that of the electrodynamic forces created thereby, on the crystallization of metallic fusion. The effect comprises the e.m.f. and the electrical current that arise in a fusion bath above which a single-phase a.c. inductor is placed. The interaction of the electromagnetic fields of the inductor current and the current in the fusion produces electrodynamic forces which

Card 1/3

L 19754-63
ACCESSION NR: AT3001943

impel the fusion to move. Tests were performed with Al of A-00 grade. The fused Al was poured at 710°C into stationary 165x540 mm molds, 50, 100, 150, and 200 mm high. The a.c. inductor was placed 20, 40, 60, and 80 mm above the surface of the fusion in the mold. Macrostructure investigations showed the refinement of the grains of the ingots. An especially refined structure was found in ingots 50 mm high. A removal of the inductor from the surface of the fusion of 60 to 80 mm resulted in some reduction of the refining effect. Analogous results were also obtained in tests with the Mg alloy Mark MA-8 (2% Mn, 0.3% Ce). Additional tests were made with semicontinuous casting of planar ingots of the same cross section and of the same two light metals. The principal effects investigated were the effect of the power fed to the inductor, the T and rate of pouring, and the height of the crystallizer on the grain-refinement effect. Al casting was performed in a crystallizer 170 and 270 mm at 690 and 710° at a rate of 7.5 and 9 cm/min. Ma ingots were cast in the same crystallizers and one 200 mm high, at T of 730 and 740°C and a casting rate of 5 to 6 cm/min. The presence of the electromagnetic field resulted in a stirring effect, and appreciable improvement of the grain structure was obtained (macroscopic photographs in orig. art.). The most powerful grain-structure-refining effect is observed at low casting T's and in the least high crystallizers. A T analysis performed by means of submerged Chromel-Alumel thermocouples showed a more uniform T distribution and decreased T

Card 2/3

L 19754-63

ACCESSION NR: AT3001943

gradients upon the application of the electromagnetic field in the MA-8 alloy. Tabulated data on the mechanical properties of the MA-8 alloy cast under various conditions show a better uniformity of structure and more elevated values of the ultimate strength and elongation under the effect of the electromagnetic field. MA-8 ingots with the more uniform structure could be rolled without any risk of the formation of surficial microfissures. It is postulated that industrial equipments may have the inductors placed around the crystallizer to facilitate the work of the casting personnel. Orig. art. has 8 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 16Apr63 ENCL: 00

SUB CODE: CH, PH, MA, EL NO REF SOV: 000 OTHER: 000

Card 3/3

ZAKHAROV, Ye.D.; GUR'YEV, I.I.; SOLOV'YEVA, V.V.; DRONOVA, N.P.; GIL'DENGORN, I.S.; KHODAKOV, P.Ye.; BONDAREV, B.I.

Nonuniformity in continuously cast ingots and its effect on the quality of semifinished products. Alium. splavy no.3:371-382 '64. (MIRA 17:6)

CHAVCHANIDZE, V.V.; BONDAREV, B.I.

The n-level theory of probability. Soob. AN Gruz. SSR 31 no. 3:537-542 S '63. (MIRA 17:7)

1. Institut kibernetiki AN GruzSSR. Predstavleno chlenom-korrespondentom AN GruzSSR L.P.Gokiyeli.

L 41764-65 EPR/EWP(z)/EWT(m)/EWP(b)/EWA(d)/EWP(t) Ps-4 IJP(c) MJW/JD
ACCESSION NR: AP4038809 S/0128/64/000/005/0016/0017

AUTHORS: Chukharov, M. V. (Candidate of technical sciences); Sokolova, A. I. (Engineer); Andronov, A. N. (Engineer); Bondarev, B. I. (Engineer)

TITLE: Increasing the purity of ingots made of alloy VM65-1

SOURCE: Liteynoye proizvodstvo, no. 5, 1964, 16-17

TOPIC TAGS: casting, impurity, magnesium, zirconium, oxide inclusion, flux/ VM65 1 alloy

ABSTRACT: To increase the purity of ingots made from alloy VM65-1, a secondary refining was attempted. This process was performed in the mixer after the original refining in the furnace. Only one half of the original amount of flux was used. The ingots produced in this manner contained much smaller inclusions of oxides, slag and zirconium, and suffered no increase in corrosion. To prevent the oxidized film on the molten metal from breaking off into the metal, the slope of the pouring trough was altered. Enclosing the metal and introducing a centrifugal pump prevented the oxidation between the mixer and the crystallizer. X-ray study of metal specimens removed from the ingots showed the presence of Zn and Zr. Chemical

Card 1/2

L 41764-65
ACCESSION NR: AP4038809 0

analysis proved their content to be (respectively): 5.47% and 0.63% at the periphery, 5.17% and 0.63% at the midpoint of the radius, and 5.07% and 2.1% at the center (these tests were conducted by Engineer Isayev). The excessive presence of zirconium and other elements was explained by the introduction of molten salts containing 66% of K_2ZrF_6, 26% of LiCl, and 8% of CaF_2. To remedy this condition, it was decided to diminish the amount of salts introduced into the batch from 8% at first to 5.5% and then to 5%. All these measures substantially increased the purity of ingots and reduced the number of culls. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 000 OTHER: 000

cc
Card 2/2

L 62217-65 EPA(s)-2/EWT(m)/EPF(n)-2/EPR/T/EWP(t)/EWP(b)/EWA(c) Ps-4/Pt-7/Pu-4
IJP(c) JD/WW/JG

ACCESSION NR: AP5014185 UR/0382/65/000/001/0123/0128
538.4 : 669.046.5

AUTHOR: Bondarev, B. I.

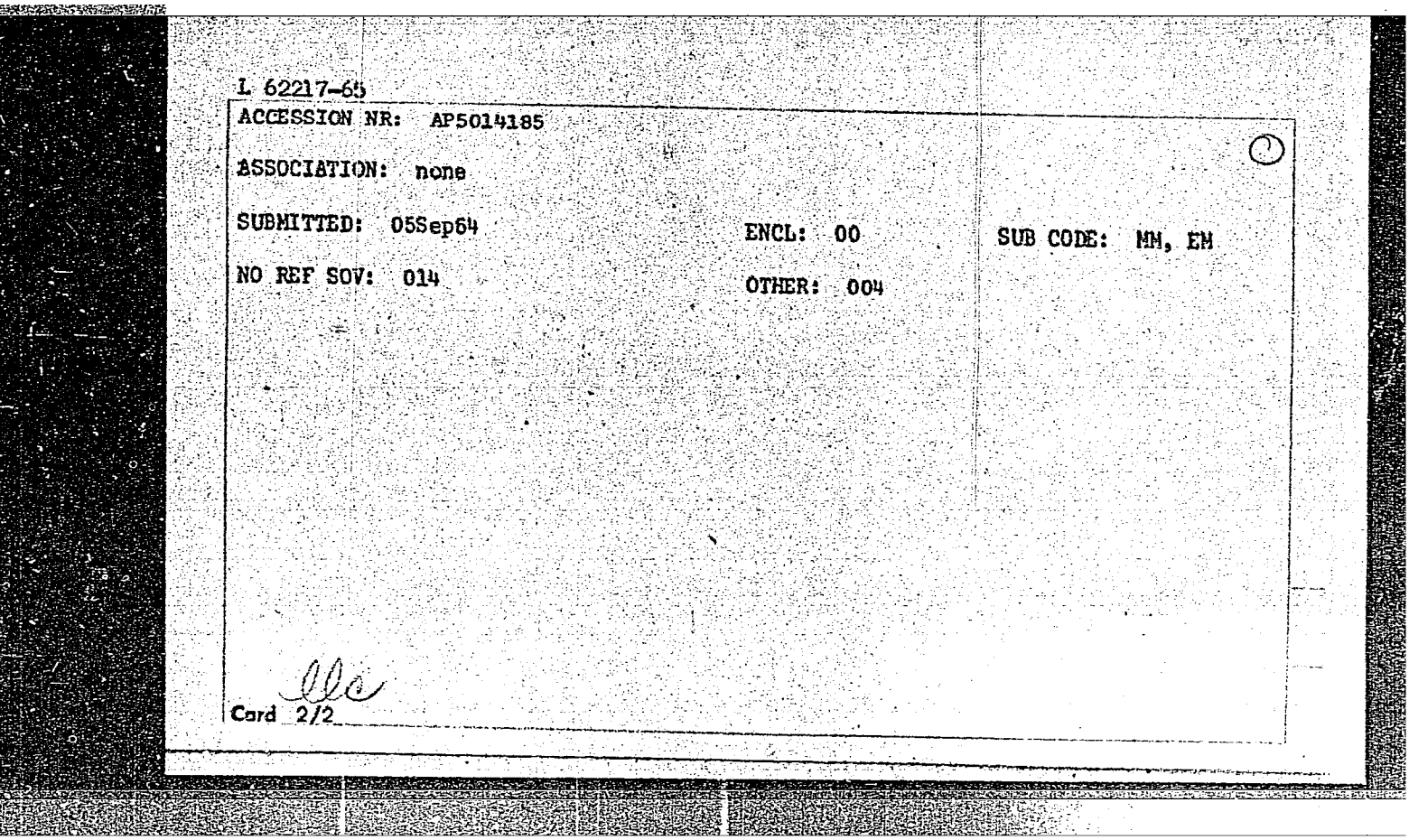
TITLE: Electromagnetic mixing of liquid metal in crystallizer during light alloy casting

SOURCE: Magnitnaya gidrodinamika, no. 1, 1965, 123-128

TOPIC TAGS: casting, liquid metal, alloy, grain size

ABSTRACT: The problem of mixing of light metal alloys to obtain fine-grained metals is briefly reviewed and the results and advantages of electromagnetic stirring during the solidification process are discussed. It is shown that electromagnetic stirring leads to more uniform and also lower temperatures in castings. Finer castings are obtained, especially when alloys with narrow crystallization range are used. For alloys with broad crystallization range electromagnetic stirring leads to more homogeneous castings. The device used for experimental testing of larger castings (with diameters larger than 400 mm) and the modification employed when smaller castings are required are shown schematically. Orig. art. has: 5 figures.

Card 1/2



L 62217-65

ACCESSION NR: AP5014185

ASSOCIATION: none

SUBMITTED: 05Sep64 ENCL: 00 SUB CODE: MM, EM

NO REF SOV: 014 OTHER: 004

Card 2/2

L 13953-66 EWT(m)/EWP(1) IJP(c) DM

ACC NR: AP6001692 SOURCE CODE: UR/0089/65/019/005/0423/0428

AUTHOR: Bondarev, B. I.; Vlasov, A. D.

ORG: none

TITLE: A self-consistent particle distribution in the maximum current of a linear accelerator

SOURCE: Atomnaya energiya, v. 19, no. 5, 1965, 423-428

TOPIC TAGS: linear acceleration, plasma beam, particle accelerator, proton accelerator, particle distribution

ABSTRACT: The problem concerning the maximum possible particle current in linear proton and heavy ion accelerators has gained in importance in recent years. Some of the earlier authors discussed the problem representing the accelerated plasma blobs in the form of uniformly charged ellipsoids. The present article shows that such a model of uniformly charged ellipsoids represents a self-consistent charge distribution. It was assumed that 1) the transverse particle oscillations may be neglected; 2) the blob is circularly symmetric; 3) the distribution density is constant in the region of the separatrices in the phase plane; and 4) the self-consistency problem is formulated for particles only along the axis of the blob. The proof verifies the known expression for the maximum current within a linear accelerator which is based on such a model. The field of adjacent blobs, the effects due to the walls of the accelerating system, and the charges of electrons and ions within the residual gas were not

Card 1/2 UDC: 621.384.62

L 13953-66
ACC NR: AP6001692

taken into account. It is also shown that a cylindrical approximation of the blobs does not lead to a self-consistent particle distribution, but does lead to an expression very similar, though somewhat larger, than the correct maximum current expression. Orig. art. has: 27 formulas and 1 table.

SUB CODE: 20/ SUBM DATE: 05Apr65/ ORIG REF: 004/ OTH REF: 001

Card 2/2

L 29590-66 EWI(d)/ESS-2
ACC NR: AR6012290 SOURCE CODE: UR/0274/65/000/010/A006/A006

32
B

AUTHOR: Bondarev, B. N.

TITLE: Diversity reception in the channels having m-distribution-type fading

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 10A43

REF SOURCE: Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR, vyp. 23, 1964, 3-11

TOPIC TAGS: radio reception, diversity reception, signal fading

ABSTRACT: The diversity reception is investigated for the case when the fading obeys this law:

$$\omega(x)=\frac{2m^m x^{2m-1}}{\Gamma(m)\,(\overline{x^2})^m}e^{-\frac{mx^2}{\overline{x^2}}},\quad x>0,\quad \text{where}\quad m=(\overline{x^2})^2/(\overline{x^2}-\overline{x^2})^2\geq\tfrac{1}{2};$$

x is a random quantity, $\Gamma(m)$ is a gamma function. The probabilities of erroneous reception for both noncoherent and coherent diversity systems are determined. It is shown that, with any value of m, the circuit of quadrature addition is the optimal circuit of the diversity reception. In the coherent diversity system, the error probability depends on the product of m and the number of diversity branches. This means that with high values of m, the number of diversity branches can be reduced while preserving the same reliability of communication. Bibliography of 5 titles. L. S. [Translation of abstract]

Card 1/1 SUB CODE: 17, 09 UDC: 621,391.18

L 31925-66 EWT(d)/FSS-2

ACC NR: AR6016244 SOURCE CODE: UR/0058/65/000/011/H016/H016

AUTHOR: Bondarev, B. N.

54
B

TITLE: Incoherent spaced reception with correlated fadings

SOURCE: Ref. zh. Fizika, Abs. 11Zh119

REF SOURCE: Tr. uchebn. in-tov svyazi. M-vo svyazi. SSSR, vyp. 24, 1965, 3-10

TOPIC TAGS: signal reception, signal correlation, incoherent reception, spaced reception, fading, reception fading

ABSTRACT: A criterion has been found for an optimal incoherent spaced reception technique for a case when fadings in various branches of the network are fully correlated. The probabilities of erroneous reception for both fully correlated fadings and for any given value of the correlation coefficient have been obtained for a circuit satisfying this criterion. [Translation of abstract] [KP]

SUB CODE: 09, 17/ SUBM DATE: none

Card 1/1

ACC NR: AR6019065 SOURCE CODE: UR/0274/66/000/001/A011/A011

AUTHOR: Bondarev, B. N.

TITLE: Noncoherent diversity reception during correlative fading

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 1A60

REF SOURCE: Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR, vyp. 24, 1965, 3-10

TOPIC TAGS: radio communication, radio equipment, radio transmission, radio receiver, measurement, interference measurement, duplex circuit

TRANSLATION: For the correlation coefficient between the transmission coefficients of various branches greater than 0.6, the efficiency of duplex reception is substantially reduced; the more so, the closer the correlation coefficient approaches unity. The criterion of optimum noncoherent diversity reception under conditions of fully correlated fading, having identical intensity in each branch and in relay distribution is established. The noise immunity corresponding to this criterion for normally distributed noise fluctuation is determined. The probability of realizing the established criterion is calculated. The gain in energy for distribution from (several) antenna vs single antenna reception for the case of complete correlation is determined. It is concluded that for the time or frequency diversity at full correlation, no improvement

UDC: 621.391.17

Card 1/2

ACC NR: AR6019065

can be obtained from diversity reception. A comparison is made of results due to a system presupposing a complete fading correlation with noise immunity provided by an ideal receiver designed on the supposition that the fading correlation does not exist. It is claimed that for duplex reception, it does not make sense to design a receiver with regard to the complete correlation of fading in the various distribution branches. 1 figure, 3 references. Yu. S.

SUB CODE: 17

Card 2/2

L 59019-65 EWT(d)/FSS-2/EEC-4 Pn-4/Pp-4/Pac-4

ACCESSION NR: AR5015996 UR/0058/65/000/005/H026/H026

SOURCE: Ref. zh. Fizika, Abs. 5Zh188

35
B

AUTHOR: Bondarev, B. N.

TITLE: Concerning the optimal number of signal positions in communication systems with amplitude modulation using the accumulation method

CITED SOURCE: Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR, vyp. 21, 1964, 27-34

TOPIC TAGS: interference immunity, amplitude modulation, orthogonal signal, signal position, storage method

TRANSLATION: Approximate formulas are obtained for the determination of the potentially attainable interference immunity of a communication system with amplitude modulation, in the case of a priori equal-probability orthogonal signals. On the basis of these formulas the author investigates the optimal number of positions of a signal when the storage method is used, such that the rate of information transmission attains a maximum for a specified communication reliability.

SUB CODE: EC ENCL: 00

dm

Card 1/1

L 3003-66 EWT(d)/FSS-2

ACCESSION NR: AP5020884 UR/0105/65/000/0007/0013 44 B
621.391.177

AUTHOR: Khanovich, I. G. 44,55; Bondarev, B. N. 44,55

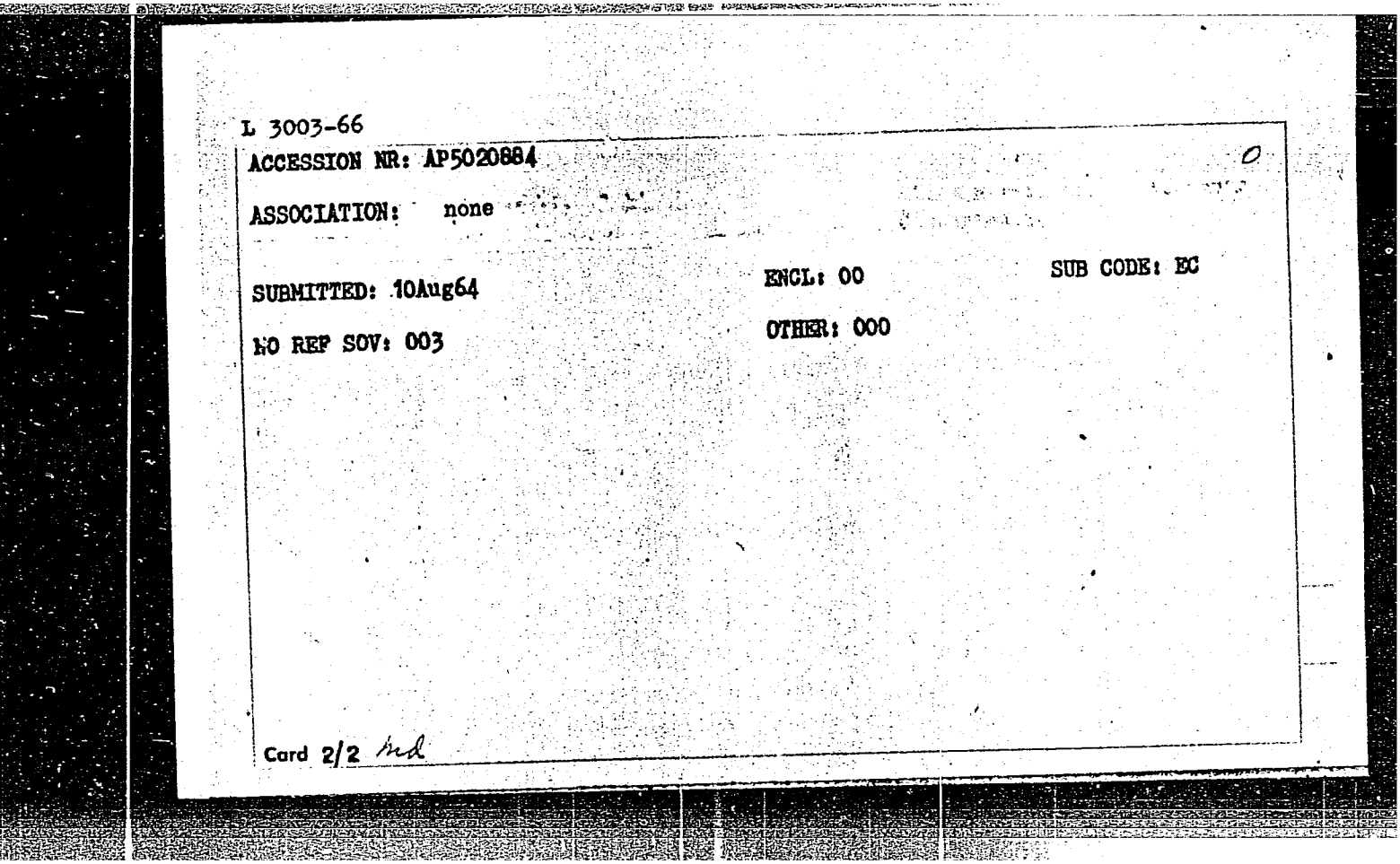
TITLE: Determining the optimal number of phase-quantization intervals in a phase-shift-keying system with storage

SOURCE: Elektrosvyaz', no. 8, 1965, 7-13

TOPIC TAGS: telegraphy, 8,44,55 phase-shift keying

ABSTRACT: A theoretical analysis is presented of the optimal number of positions of the multipositional signal which ensures maximum speed of information transmission for a specified noise immunity of the system. Curves of f(m) are plotted for various Q/σ, where m is the number of quantization intervals and Q/σ characterizes the signal-to-noise ratio. This approximate formula is given for the probability of signal distortion when the optimal number of quantization intervals is employed: $P_{max} = \left\{2V\left(\frac{\sqrt{1,5}Q}{\sigma}\right)\right\}^n$ where n is the number of repetitions of the signal. This project was "under the direction of A. M. Zavezdnyy 44,55 whom the authors wish to thank.". Orig. art. has: 2 figures, 36 formulas, and 1 table.

Card 1/2



L 3003-66

ACCESSION NR: AP5020884 0

ASSOCIATION: none

SUBMITTED: 10Aug64 ENCL: 00 SUB CODE: EC

NO REF SOV: 003 OTHER: 000

Card 2/2 hd

ACC NR: AR6035205 SOURCE CODE: UR/0274/66/000/008/A004/A004

AUTHOR: Bondarev, B. N.

TITLE: Carrying capacity of a communcations channel with the signal fading over m distribution with spaced reception

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 8A28

REF SOURCE: Tr. Nauchno-tekhn. konferentsii Leningr. elektrotekhn. in-ta svyazi, vyp. 2, 1965, 51-59

TOPIC TAGS: communication channel, radio signal, signal reception

ABSTRACT: The carrying capacity of a communications channel with the signal fading over m-distribution is determined for optimum coherent and noncoherent spaced reception by binary encoding. The author's summary. [Translation of abstract] [NT]

SUB CODE: 17/

Card 1/1 UDC: 621.391.133

15-57-5-7225

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 5, p 211 (USSR)

AUTHOR: Bondarev, B. S.

TITLE: New Viscous Liquid for Hydrofract Method (Primeneniye novoy vyazkoy zhidkosti dlya gidravlicheskogo razryva plasta)

PERIODICAL: Novosti neft. tekhn. Neftepromysl. delo, 1956, Nr 8, p 17

ABSTRACT: A viscous liquid on a starch base was used for hydrofract in 11 enterprises of the Oktyabr'neft'. Formational water was used in preparing the liquid, because of its softness. Twenty-two kg of cornstarch and 15 liters of caustic soda with a specific gravity of 1.5 were used per cubic meter of water.

M. G. M.

Card 1/1

22(1) SOV/47-59-3-10/53

AUTHORS: Averichev Yu.P., Bondarev D.D., Grinberg Yu.L., Shalayev F.K.

TITLE: Relating Courses in Physics to Industrial Practice

PERIODICAL: Fizika v shkole, 1959, Nr 3, pp 27-31 (USSR)

ABSTRACT: This is a survey of practical training in physics received by pupils of school 144 in Moscow. Practical training begins in the 6th class. The pupils visit the plant, where later on (9th class) they will do practical work, and the teachers illustrate the subject of the lessons with examples taken from plant practice. The work to be performed at the plant in the 9th class extends over approximately 200 hours. In the course of a training year, the participants work at the plant once a week for 4 hours, and after the termination of the school year there follows a continuous practice of 12 days. During his training, each participant works at two places, where he is

Card 1/3

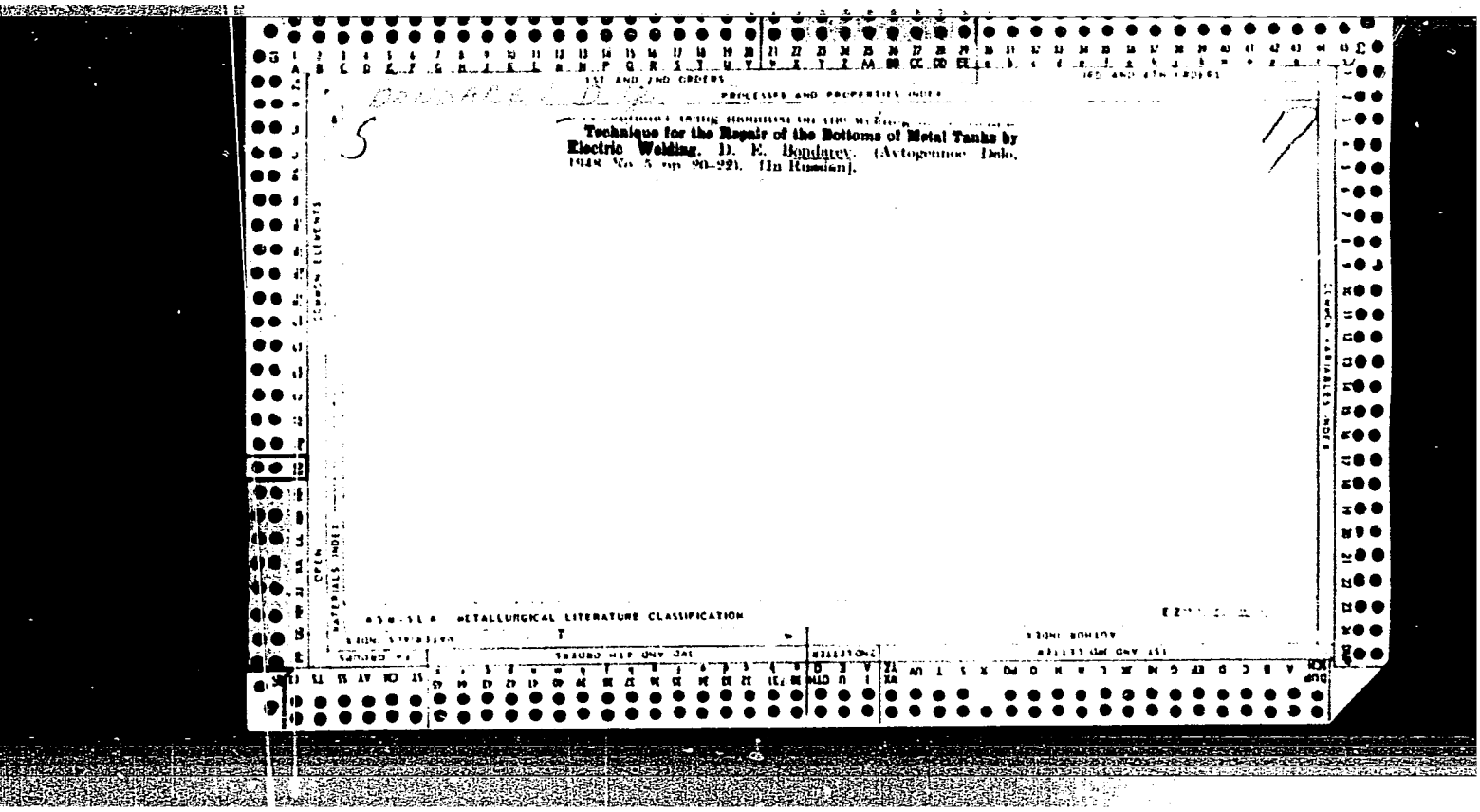
Relating Courses in Physics to Industrial Practice

assigned special tasks. For two years the industrial training of the 144th school was carried out at the Zavod radiotekhnicheskikh priborov (Radiotechnical Device Plant). At present 1958/59 it is performed at the Moscow plant "Izolyator", which produces lead-ins, condensers and other items for the electrotechnical industry. At this plant the trainees have to get acquainted with the full production cycle and the organisation of the plant (electric shop, electric welding department, transport section, mechanical repair shop, galvanic shop). The main principles ruling this training, as set forth by the authors, are the following: 1) impart to the trainees some habits and skills in practical work and get them accustomed to working under industrial conditions; 2) give the trainees an idea of the general foundations of socialist industrial production; 3) show the application of scientific knowledge

Relating Courses in Physics to Industrial Practice

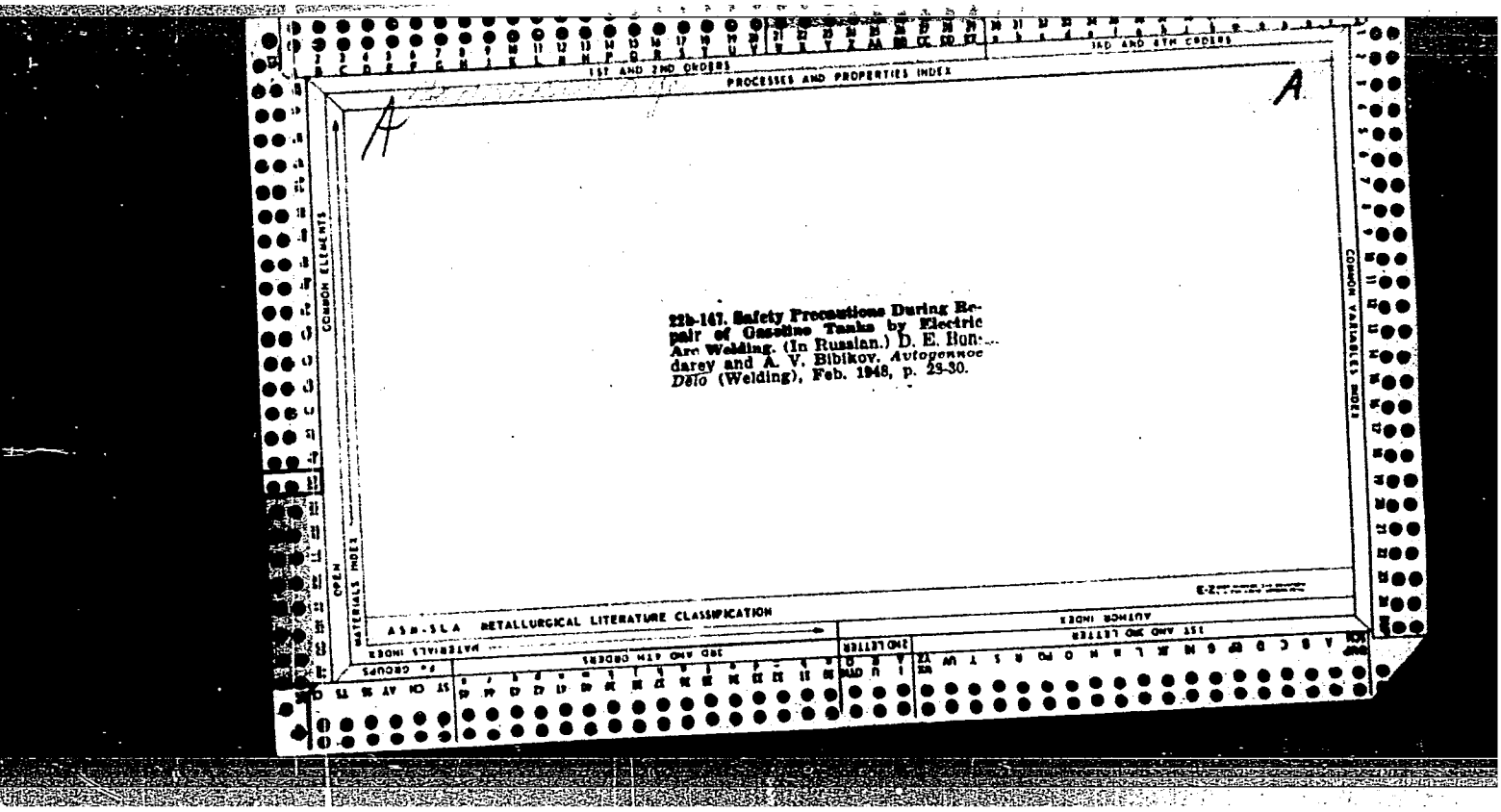
(physics, chemistry, etc) in production; enlarge, deepen and consolidate this knowledge; 4) get the trainee acquainted with the different kinds of labor and help him in the selection of a profession; 5) favor the development of a Communist attitude toward work. The authors give a survey of the training at the plant and at the school and list some tasks given to the pupils.

ASSOCIATION: 144-ya shkola, Moskva (School Nr 144, City of Moscow)



Technique for the Repair of the Bottoms of Metal Tanks by Electric Welding. D. E. Bondarev. (Avtogennoe Delo, 1948 No 5 pp 20-22). [In Russian].

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



22b-141. Safety Precautions During Repair of Gasoline Tanks by Electric Arc Welding. (In Russian.) D. E. Hundarev and A. V. Bibikov. *Avtogennoe Delo* (Welding), Feb. 1948, p. 29-30.

24(3) SOV/48-23-3-30/34

AUTHOR: Bondarev, D. Ye.

TITLE: On the Report by R. V. Telesnin and Ye. F. Kuritsyna (Po dokladu R. V. Telesnina i Ye. F. Kuritsyny). "On the Rate of Magnetic Polarity Reversal of Ferrites" (Vol 23, Nr 3, p 352) ("O skorosti peremagnichivaniya ferritov" (t.23, No 3, str.352)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 3, pp 419-420 (USSR)

ABSTRACT: The authors made their observations in fields which exceed the coercive force by several times. The data obtained by them refer to potentials of these fields. However, in fields of the order of magnitude of the coercive force the reporters refer to the data published in reference 1, and draw the conclusion that the first maximum lacks in ferrites. This was, however, not confirmed by experiment. In the case of a pulse-like magnetization of ferrites with an exactly regulated amplitude - time relation two maxima are clearly to be recognized. It is a characteristic phenomenon that both the first and the second maximum degenerate to a pulse with one single maximum under the effect of magnetic external fields. Figures a and b show an oscillogram group of the pulses

Card 1/2

On the Report by R. V. Telesnin and Ye. F. Kuritsyna. SOV/48-23-3-30/34
"On the Rate of Magnetic Polarity Reversal of Ferrites" (Vol 23, Nr 3, p 352)

compensated by external fields. The marking lies at 0.5 microseconds. The first maximum is presumably connected with the rapid rotation of the magnetization vector of the domains predominantly capable of being oriented. The second maximum is apparently due to the effect of magnetic fatigue and the effect of microcurrent fields. There are 2 figures and 1 reference.

Card 2/2

BONDAREV, L. D. Ye.

PHASE I BOOK EXPLOITATION SOV/4893

Vsesoyuznoye soveshchaniye po fizike, fiziko-khimicheskim svoystvam ferritov i fizicheskim osnovam ikh primeneniya. 3d, Minsk, 1959

Ferrity; fizicheskiye i fiziko-khimicheskiye svoystva. Doklady (Ferrites; Physical and Physicochemical Properties. Reports) Minsk, Izd-vo AN BSSR, 1960. 655 p. Errata slip inserted. 4,000 copies printed.

Sponsoring Agencies: Nauchnyy sovet po magnetizmu AN SSSR. Otdel fiziki tverdogo tela i poluprovodnikov AN BSSR.

Editorial Board: Resp. Ed.: N. N. Sirota, Academician of the Academy of Sciences BSSR; K. P. Belov, Professor; Ye. I. Kondorskiy, Professor; K. M. Polivanov, Professor; R. V. Telesnin, Professor; G. A. Smolenskiy, Professor; M. N. Sholits, Candidate of Physical and Mathematical Sciences; E. M. Smolyarenko; and L. A. I. Volokhanovich. Bashkirov; Ed. of Publishing House: S. Kholyavskiy; Tech. Ed.:

PURPOSE: This book is intended for physicists, physical chemists, radio electronics engineers, and technical personnel engaged in the production and use of ferromagnetic materials. It may also be used by students in advanced courses in radio electronics, physics, and physical chemistry.

COVERAGE: The book contains reports presented at the Third All-Union Conference on Ferrites held in Minsk, Belorussian SSR. The reports deal with magnetic transformations, electrical and galvanomagnetic properties of ferrites, studies of the growth of ferrite single crystals, problems in the chemical and physicochemical analysis of ferrites, studies of ferrites having rectangular hysteresis loops and multicomponent ferrite systems exhibiting spontaneous rectangularity, problems in magnetic attraction, highly coercive ferrites, magnetic spectroscopy, ferromagnetic resonance, magneto-optics, physical principles of using ferrite components in electrical circuits, anisotropy of electrical and magnetic properties, etc. The Committee on Magnetism, AS USSR (S. V. Vonsovskiy, Chairman) organized the conference. References accompany individual articles.

SOV/4893

Ferrites (Cont.)

Bondarev, L. Ye. The Selection of Ferrites With Rectangular Hysteresis Characteristics For Quick-Acting Systems 637

Skugarev, V. V., Sh. Yu. Ismailov, and L. P. Korichnev. Pulse Generator for Studying Ferrites 643

Il'yushenko, L. F., and M. U. Shales. The Ferrite-Based Memory Device of the Electronic Computer of the Academy of Sciences, Belorussian SSR 645

AVAILABLE: Library of Congress (TK453.V75)

JA/dfk/os
5/2/61

Card 18/18

Card 4/18

45156

24.2200

S/020/63/148/002/031/037
B192/B101

AUTHORS: Bondarev, D. Ye., Basikhin, Yu., V.

TITLE: Ferrites of the system MgO - MnO_t - Fe_2O_3 with Sc_2O_3

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 2, 1963, 365 - 368

TEXT: It is investigated to what extent the addition of Sc_2O_3 to ferrites of the composition MgO - MnO_t - Fe_2O_3 produces magnetic and electric properties favorable for use in computer memory cells. Ferrites with scandium content were designated HS. Amplitude oscilloscope curves recorded for some of these ferrites having a Sc_2O_3 content between 0.05 and 0.18 mole%, showed that the coercive force may be varied over a wide range by varying the Sc_2O_3 addition. The static magnetic characteristics of HS-2 ferrite with an Sc_2O_3 content of 0.10-0.12 mole%, and of the ferrites ВТ-1 (VT-1) (ITM VT AN SSSR), D-2 and IS80 T-B (by a USA firm) not containing any scandium oxide were compared. Measurements showed that HS ferrites caused a substantial decrease of magnetic induction as well as an improvement of

Card 1/2

Ferrites of the system ... S/020/63/148/002/031/037
B192/B101

linearity and a rise of the hysteresis sections $B_s - B_r - B_1$. The magnetic reversal time τ was measured as a function of the strength of the magnetic reversal field for the ferrites HS-1 (Sc_2O_3 content 0.05 - 0.06 mole %), HS-2 (Sc_2O_3 content 0.10 - 0.12 mole %) and VT-1. For HS ferrites, $1/\tau$ was $\sim 12\,\mu sec^{-1}$ at 5 oe. and for VT-1 $\sim 9\,\mu sec^{-1}$ at 6oe. With an identical coercive field, the amplitude of the output signal during magnetic reversal was only half as big for HS-2 as for VT-1. In the case of high-frequency magnetic reversal this leads to lower heating of a HS-2 core (size 1.2·0.8·0.4 mm). The electromagnetic properties of HS ferrites are characterized by the following quantities: saturation induction B_m = 500 - 1500 Gauss; coercive power H_c = 0.5 - 2 oe; relation B_r/B_m = 0.95 - 0.97; commutation coefficient S_w =0.2 - 0.5 oe·msec; critical field H_o = 0.5 -2.5 oe; resistivity $\rho = 10^8 - 10^{10}$ ohm cm. Conclusion: HS ferrites are well suited for memory cells of fast computers. There are 4 figures.

PRESENTED: July 7, 1962, by V. I. Spitsyn, Academician
SUBMITTED: July 3, 1962
Card 2/2

BONDAREV, D.Ye.; BASIKHIN, Yu.V.

Ferrites in the system MgO - MnO - Fe_2O_3 addition. Dokl. AN SSSR 148 no.2:365-368 Ja '63. (MIRA 16:2)

1. Predstavleno akademikom V.I. Spitsynym.
(Ferrates) (Scandium oxide)

ACCESSION NR: AP4023415

S/0048/64/028/003/0607/0610

AUTHOR: Bondarev, D.Ye.

TITLE: Improvement of the magnetic properties of Mg-Mn ferrites by introduction of scandium oxide /Report, Symposium on Ferromagnetism and Ferroelectricity held in Leningrad 30 May to 5 June 1963/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.3, 1964, 607-610

TOPIC TAGS: ferrite, magnesium manganese ferrite, scandium doped ferrite, ferrite induction, ferrite coercive force, ferrite hysteresis, ferrite magnetic heat loss, magnetization switching, ferrite noise, HS ferrite, computer memory, magnetic storage

ABSTRACT: The magnetic properties of Mn-Mg ferrites containing Sc are briefly discussed. These materials, to which the designation HS has been given, were previously prepared (D.Ye.Bondarev and Yu.V.Basikhin, Avtorskoye svidetel'stbo,No.137374, 1960; Dokl.AN SSSR,143,356,1963) in a search for improved magnetic materials for use in high speed computer memory banks. The induction of the HS materials is from 300 to 1000 gauss, and the coercive force is from 0.6 to 2 Oe. The magnetization rever-

Card 1/2

ACCESSION NR: AP4023415

sal time in the Z mode is 0.12 microsec, the high speed action is achieved in lower fields than in the case of the BT-1 ferrites. The noise level is said to be nearly an order of magnitude less than that of "ordinary" ferrites. Both the spontaneous and the forced demagnetization portions of the hysteresis loop are very nearly straight; the HS materials are superior in this respect to the ISSOT-B ferrites. The temperature rise under high frequency magnetization reversal is about half that obtained with a BT-1 ferrite, but the wide range of coercive force available makes it possible to choose a material to suit a specific application. The HS ferrites can be manufactured with the usual metal ceramic techniques, with some improvements described elsewhere (D.Ye.Bondarev and B.S.Andreyev, Proshkovaya metallurgiya,Izd.AN USSR,No.3,1964). The marked improvement of the magnetic properties of Mn-Mg ferrites resulting from introduction of Sc is ascribed to the empty 3d and 4s shells of the Sc^{3+} ion, its tendency to occupy the octahedral sites, and the low value of its 3d screening constant. Orig.art.has: 1 formula, 4 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 10Apr64

ENCL: 00

SUB CODE: PH, CP

NR REF SOV: 006

OTHER: 008

Card 2/2

BONDAREV, D.Ye.

Transformation of the magnetic properties of scandium-containing ferrites. Dokl. AN SSSR 154 no.1:83-85 Ja'64. (MIRA 17:2)

1. Predstavleno akademikom V.I. Spitsynym.

ACCESSION NR: AP4044916 S/0226/64/000/004/0097/0100

AUTHOR: Bondarev, D. Ye.; Solov'yev, O. A.

TITLE: Low induction ferrites for computer memories

SOURCE: Poroshkovaya metallurgiya, no. 4, 1964, 97-100

TOPIC TAGS: ferrite, low induction ferrite, computer, memory, computer memory, scandium ferrite, HS ferrite

ABSTRACT: The trend in computer memories containing ferrite cores with rectangular hysteresis characteristics is toward miniaturization of both the cores and the matrix device required for accelerating the response of the memory. The size and magnetic induction of the ferrite core have a significant effect on the characteristics of the memory. The analysis in the present paper is based on the ferromagnetic theory of L. Neel, which explains the essence of the magnetic interaction of ferrites having a spinel structure. However, this theory does not indicate the magnetic-chemical methods for affecting the resultant magnetic moment between the octahedral and tetrahedral lattices of the spinel structure. In the present work, oxides were introduced into the ferrites to improve their properties, the magnetic moment of a Mn-Mg ferrite being decreased by the addition of non-magnetic activating ions, namely scandium oxide. The Sc^{3+} ions lowered the magnetic moment of the

Card 1/2

ACCESSION NR: AP4044916

octahedral component, thus decreasing the magnetic induction of the core. In this way, new ferrites have been created, designated by the letters HS, with low residual induction (about 800 gs). These ferrites can be used successfully in quick-response memories with large storage capacities. Orig. art. has: 4 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 10May63 ENCL: 00 SUB CODE: DP, MM

NO REF SOV: 004 OTHER: 008

Card 2/2

L 6968-65 EWG(j)/EWT(m)/EPF(c)/EPR/EWP(q)/EWP(b) Pr-4/Ps-4 SSD/ASD(a)-5/
AS(mp)-2/APWL/ASD(d)/RAEM(t)/ESD(t)/RAEM(a)/ESD(dp)/ESD(gs) JD
ACCESSION NR: AP4010754 S/0020/64/154/001/0083/0085

AUTHOR: Bondarev, D. Ye.

TITLE: Transformation of magnetic properties in scandium containing ferrites

SOURCE: AN SSSR. Doklady*, v. 154, no. 1, 1964, 83-85

TOPIC TAGS: scandium, scandium oxide, ferrite, ferrite property, magnetic property scandium containing ferrite, Mn-Mg ferrite

ABSTRACT: Author attempts by addition of scandium sesquioxide to obtain ferrites of the Mn-Mg system with low induction (800 to 1000 gauss) and improved rectangular hysteresis characteristic as well as with a high speed of response (in comparison to the American S-1, S-3, D-2, 40GM-1, 1S80T-B and Soviet VT-1 and VT-6 ferrites, which do not completely satisfy requirements for high speed response). It is common knowledge that, of the oxides of the d-metals, the Fe^{3+} ion in natural compounds generally occupies the octahedral position and has vacant $3d^0$ and $4s^0$ electron shells. Hence, the introduction of Sc_2O_3 into the Mn-Mg ferrite system should bring about a redistribution and compensation of the magnetic

Card 1/2

T 6968-65
ACCESSION NR: AP4010754

3

moments of the system. The introduction of 0.05-0.10% Sc_2O_3 produced ferrites of the Mn-Mg system with a low induction and which are suitable for high speed memory systems. It was possible to use this ferrite for a Z-type operational memory with an access time of 1 microsecond. The experimental data showed that introduction of scandium oxide makes it possible to obtain a wide variety of magnetic properties of Mn-Mg ferrites, particularly the inductive and coercive force. "Author wishes to thank Acad. V. I. Spitsyn, L. N. Komissarova and V.M. Shatskiy for valuable hints and interest in this work." Orig. art. has: 3 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 28Jun63 ENCL: 00 SUB CODE: EM, EC

NO REF SOV: 002 OTHER: 003

Card 2/2

BONDAREV, D.Ye. (Moskva); SOLOV'YEV, O.A. (Moskva)

Ferrites with low induction for computer memory devices. Porosh.met. 4 no.4:97-100 Jl-Ag '64. (MIRA 18:8)

L 12416-65 EWG(j)/EWT(l)/EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(b) Pr-4/Ps-4/Pt-10
IJP(c)/ASD(a)-5/ASD(d)/AFTC(b)/AFETR/RAEM(i)/ESD(dp) JD/JG/MLK

ACCESSION NR: AT4047136 S/0000/64/000/000/0127/0130

AUTHOR: Bondarev, D. Ye.

TITLE: Transformation of the magnetic properties of a spinel structure

SOURCE: AN UkrSSR. Institut problem materialovedeniya. Redkiye i redkozemel'nyye elementy* v tekhnike (Rare and rare earth elements in engineering). Kiev, Naukova dumka, 1964, 127-130

TOPIC TAGS: ferrite, spinel structure, garnet structure, scandium oxide, induction, computer memory

ABSTRACT: The effect of Sc_2O_3 on the magnetic properties of the spinel structure ferrites has not hitherto been studied (except in ferrites with garnet structures). The present authors obtained a decrease in the induction of ferrites with spinel structures by introducing scandium oxide into the composition of the Mn-Mg ferrite system, thus permitting a real improvement in the magnetodynamic properties of ferrites for memory-matrices. Comparisons between non-Soviet and type VT-1 ferrites are shown graphically. The low induction (900-1000 gauss) ensures less heating of the core during high frequency magnetization, amounting to 33-50% of that with current high-induction ferrites. The remagnetization time in the memory system was 0.12 μ sec. The authors then suggest a mechanism for the de-

Card 1/2

L 12416-65

ACCESSION NR: AT4047136

crease in inductance resulting from the presence of scandium, in terms of the octahedral sublattice and the electrons in the 3d shell. Use of rare-earth ions in the spinel structure leads to increased coercivity, indicating stress in the system due to the larger ionic radii. Use of scandium oxide for the first time enables realization of the strong interaction of the sublattice of the spinel structure as required by Neel's theory. Since the latter does not take electron exchange between the 3d shell and unpaired $4S^2$ electrons into consideration, in designing new ferrites with a spinel structure, recourse will be required to the Frenkel-Heisenberg theory. Orig. art. has: 1 table and 2 figures.

ASSOCIATION: Institut problem materialovedeniya AN UkrSSR (Institute for Problems in Materials Science, AN UkrSSR)

SUBMITTED: 08Jun64 ENCL: 00 SUB CODE: EM, MT

NO REF SOV: 001 OTHER: 003

Card 2/2

L 44727-65 EWT(l)/EWT(m)/EWP(t)/EEC(b)-2/EED-2/EWP(b)/EWA(h) Pj-4/Pad
IJP(c) JD/JG
ACCESSION NR: AP5010404 UR/0226/65/000/004/0050/0052

AUTHOR: Andreyev, B. S.; Bondarev, D. Ye.

TITLE: Production technology of scandium-containing ferrite cores

SOURCE: Poroshkovaya metallurgiya, no. 4, 1965, 50-52

TOPIC TAGS: ferrite core, scandium oxide, computer memory, hysteresis loop, sintered ferrite core, coercive force, magnetic flux, magnetic inductance, saturation inductance, spinel structure, HS ferrite core

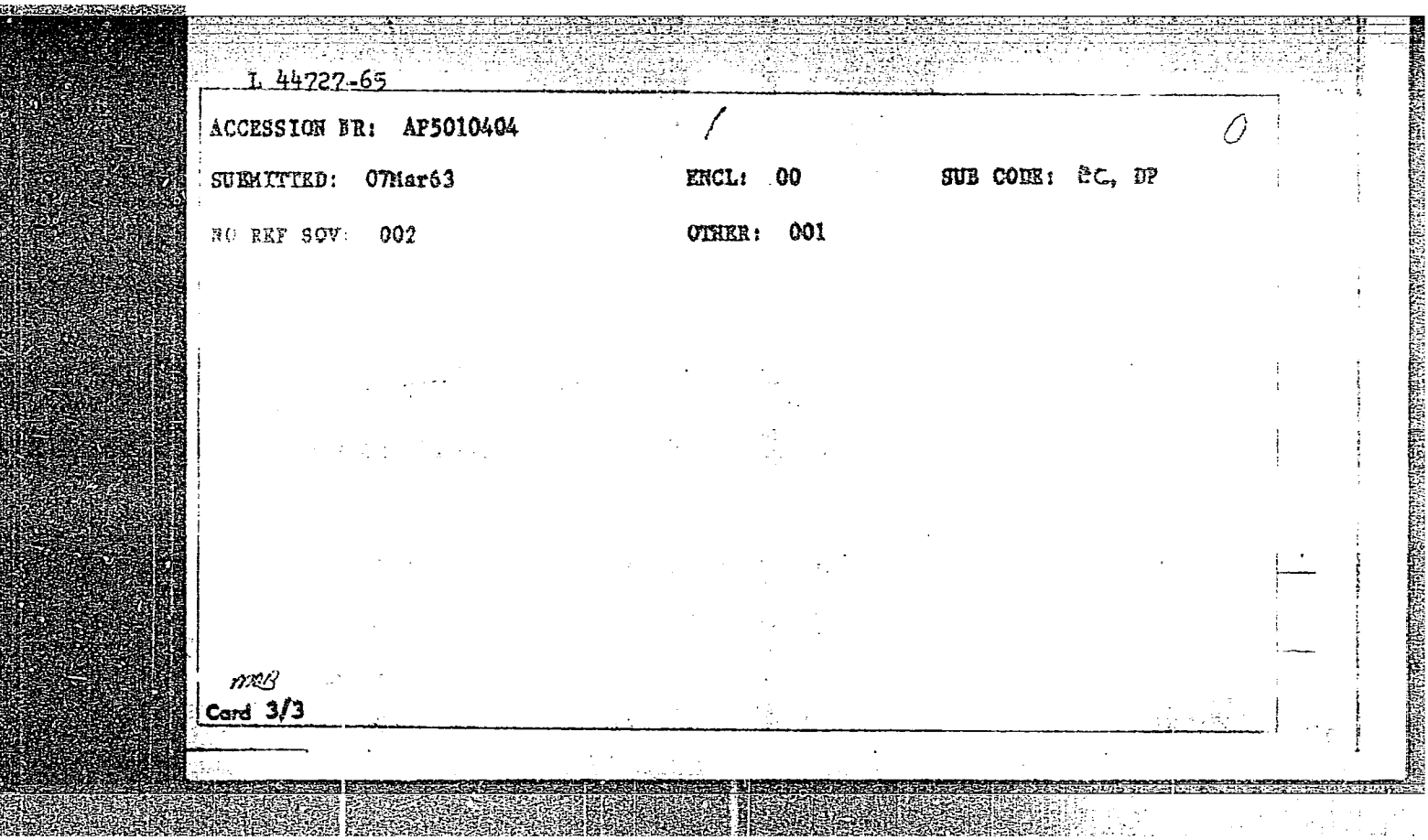
ABSTRACT: The development of high-speed computer memories creates a need for improved ferrite cores, since the currently used ferrites of the Mn-Mg system, such as the American S-1, D-2, 1S80T-B, 40QM, MFF and the Soviet VT-1 and VT-6, with their high saturation inductance tend to overheat in the presence of high-frequency magnetization reversals, which adversely affects the operating stability of computers. This necessitates developing ferrites of the Mn-Mg system with lower inductances of the order of 900-1000 gauss. It has been established that the addition of small amounts of scandium oxide sharply reduces inductance, improves the linearity of segments of the hysteresis loop, and increases operating speeds.

Card 1/3

ACCESSION NR: AP5010404

Accordingly the author describes the chemical composition and the process of manufacturing of ferrite cores of this kind, termed HS ferrite cores in the Soviet Union. The raw charge is pulverized in a conventional ball mill, and the resulting paste is dried with a radiant-heat lamp, screened through a fine sieve, sintered for 6 hr at 875°C and cooled in the air. The cooled powder is granulated on adding 10% aqueous solution of polyvinyl alcohol, whereupon it is compression-molded into ferrite cores. The molded cores are sintered at 900°C, with the temperature being subsequently raised to 1300°C, for 2 hr and hardened at 1000°C in air. Further, the author describes an experimental comparison of the characteristics of the coercive current and magnetic flux of ferrites with and without the admixture of scandium oxide, which shows that the addition of scandium oxide sharply affects the magnetic inductance and coercive force of ferrites of the Mn-Mg system. The concomitant sharp change in the resultant magnetic moment is attributed to the redistribution of the electrons of the 3d-shells of the magnetoactive ions Fe^{2+}, Fe^{3+} and the nonmagnetic ion Sc^{3+}, present in the octahedral and tetrahedral nodes of the spinel structure. Orig. art. has: 3 figures, 1 table.

ASSOCIATION: none



L 44727-65

ACCESSION NR: AP5010404 / 0

SUBMITTED: 07Mar63 ENCL: 00 SUB CODE: EC, DP

NO REF SOV: 002 OTHER: 001

mxb

Card 3/3

L 61911-65 EWT(d)/EWT(1)/EED-2/EWP(1) Pq-4/Pg-4/Pk-4 IJP(c) BB/GG

ACCESSION NR: AP5013255 UR/0226/65/000/005/0093/0102

AUTHOR: Bondarev, D. Ye. (Moscow)

TITLE: On the causes of quick response in ferrites with rectangular hysteresis characteristics

SOURCE: Poroshkovaya metallurgiya, no. 5, 1965, 93-102

TOPIC TAGS: ferrite core memory, ferrite material, physicochemical concept, crystallography, rare earth compound, magnetic property

ABSTRACT: The quick response of ferrites with rectangular hysteresis characteristics is discussed. Chemical composition, temperature, and magnetic reversal effects are considered. Test variables were related to the generalized equation $S_w = \tau(H_m - H_0)$, where S_w is the magnetic reversal coefficient; τ is the response time; H_m is the applied field; and H_0 is the threshold field of the material. Two general groups of factors were classified: crystallo-chemical and physical technological. In the first group, the dependence of composition (ferrite types) on S_w and H_0, and the B-H (flux density-magnetizing force) characteristics were tabulated.

Card 1/2

L 61911-65

ACCESSION NR: AP5013255

A graph is given showing the influence of activator additions of Sc_2O_3 on the amplitude of the oscillogram output signal. Atomic characteristics are tabulated for seven different ions, and the magnetic moments are found to vary significantly; these are related to the results of Neel's theory of magnetization for the purpose of practical regulation of ionic properties in ferrites. For the second group, processing techniques and the influence of dispersion agents were related to the magnetic characteristics. The amplitude of the oscillogram output signal was given as a function of core heating temperature (20-120°C) in conjunction with Curie temperature (T_c) data. It was recommended that the core operating temperature T_{op} should be kept below (0.30 to 0.35)T_c. Other physical variables such as the influence of magnetic reversal and quadratic coefficients on the magnetodynamic properties of different ferrites were also studied. The advantages of the new HS ferrite bands containing Sc_2O_3 in matrix memory circuits are pointed out. Orig. art. has: 8 figures, 9 tables.

ASSOCIATION: none

SUBMITTED: 22Jan64 ENCL: 00 SUB CODE: SS, EM

NO REF SOV: 008 OTHER: 007

Card 2/2 dm

L 61834-65 EWT(d)/EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EED-2/EWP(z)/EWP(b)/EWP(l)
Pq-4/Pg-4 IJP(c) BB/JD/JG/GG
ACCESSION NR: AP5010037 UR/0226/65/000/005/0065/0069

53
B

AUTHOR: Bondarev, D. Ye. (Moscow)

TITLE: Causes for the transformation of magnetic properties of scandium-containing ferrites

SOURCE: Poroshkovaya metallurgiya, no. 5, 1965, 60-69

TOPIC TAGS: ferrite material, ferrite core memory, physicochemical concept, crystallography, rare earth compound, magnetic property

ABSTRACT: The magneto-chemical and physico-structural causes in the production of low induction ferrites were studied. Since many of the existing ferrites were found unsuitable for quick-response memory systems of computers, a new series of ferrites (type HS) containing Sc_2O_3 was developed. A theoretical explanation is given for magnetic moment calculations, relating to Neel's theory of ferromagnetism, which explains magnetic properties on the basis of sub-lattice positioning. Three different groups of ferrites were made, containing: 34-36.4% Fe_2O_3, 39.4-45.5% MgO, 1.8-9.1% MnO, 5.3-6.06% Sc_2O_3; while one group had 3.03% Cr_2O_3. The HS ferrites were found to have inductions of 800-1000 gauss, and magnetic reversal times of 0.1-

Card 1/2

L 61834-65

ACCESSION NR: AP5016037

0.2 microsec. Data are given in the form of *B-H* curves (*B*-flux density; *H*-magnetizing force) for the quick-response HS ferrites and for the more common ferrites. The effect of temperature of self-heating on the frequency of magnetic reversal showed the HS ferrites to be superior, since they have lower self-heating for frequencies ranging from 50 to 200 kc. The HS ferrites also have lower response times as a function of the intensity of magnetic reversal. An extensive theoretical explanation is given for the magnetic behavior of ferrites, particularly the HS types, by using existing data on the chemical and structural characteristics of the ions. Atomic parameters such as ionic radius, magnetic moment, ionization potential, and crystal position for nine different ions, including Sc^{3+} were [illegible] in a theory for filling of electronic shells and determination of polarization factors for six different cations. The conclusions reached were that the Sc^{3+} ion interacts with other lattice sites through polarization by the oxygen anion. Orig. art. has: 7 figures, 5 tables.

ASSOCIATION: none

SUBMITTED: 26Nov64 ENCL: 00 SUB CODE: SS, EM

NO REF SOV: 011 OTHER: 013

Card 2/2

L 38423-66 EWT(d)/EWP(1) IJP(c) GG/BB

ACC NR: AP6024411 SOURCE CODE: UR/0020/66/169/001/0081/0084

AUTHOR: Bondarev, D. Ye.

ORG: none

42
B

TITLE: Controlling the magnetic flux density of ferrites by activating ions

SOURCE: AN SSSR. Doklady, v. 169, no. 1, 1966, 81-84

TOPIC TAGS: ferrite, ferrite memory core, ferrite switch

ABSTRACT: The results of a brief analysis of the causes leading to lowering or improving the properties of ferrite memory cores are presented. The study was based on Neel's theory of ferrimagnetism explaining the nature of the resulting magnetic moment in ferrites. It is indicated that when either the octahedral or tetrahedral components of the resulting magnetic moment are changed, low or high flux density ferrites are obtained. The same effects can be better accomplished by introducing in a manganese-magnesium composition corresponding activating ions, such as Sc^{3+} and Sn^{4+}. A new series of materials is reported in which tin, scandium or palladium are substituted for a portion of the iron in conventional Mn—Mg ferrites. For example, the Sn-containing ferrite $70MgFe_2O_4 \cdot 15Mg_2SnO_4 \cdot 15Mn_3O_4$ has a saturation flux density of 800 G, a coercive force of about 3.5 Oe, and a Curie temperature of 160C. When the content of Sn^{3+} ions is increased, the magnetic flux density is reduced

Card 1/3

sharply with an increase in the coercive force. A 0.37-μsec switching time is obtained in coincident current operation with ferrites containing 10, 15, and 25 mol% Sn. High-coercivity ferrites can also be obtained with the addition of 1500-Å palladium particles to an Mn-Mg system. Thus, for example, with the addition of 10 and 20% palladium to an Mn-Mg ferrite, its coercive force was raised from 0.9 to 2.6 and 3.6 Oe, respectively, while its switching time was reduced from 0.70 to 0.16 and 0.10 μsec, respectively. Sc-containing ferrites are characterized by a high linearity of segments of the hysteresis curve, short switching times, low heating temperatures at high-frequency switching, and low noise amplitudes during information readout. By

Chemical composition of Sc-containing ferrites (wt%)

Ferrite type	Fe_2O_3	MgO	MnO	Sc_2O_3	Cr_2O_3
HS-1	64,75	18,98	10,63	5,64	—
HS-2	64,00	19,50	10,30	6,20	—
HS-3	60,50	18,60	10,50	10,40	—
HS-8	57,70	19,00	10,40	8,30	4,60

changing the Sc content the coercive force can be varied in a wide range. Flux density characteristics of several types of domestic ferrites made with and without Sc additions are compared. It is shown that due to the low flux density the Sc-containing

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000206220015-3"

ACC NR: AP6024671

ferrites have 2—3 times lower heating temperatures during high-frequency switching. One of these ferrites, the HS-8, has a magnetic flux density of 700—800 G and a coercive force of 0.6—0.7 Oe. The ferrite measuring 3 x 2 x 1 mm measures binary information transmission at a frequency of 1—2 Mc. The chemical composition of some of the Sc-containing ferrites (wt%) is given in the table. Orig. art. has: 1 table, 4 figures. [JR]

SUB CODE: 09/ SUBM DATE: 08Oct65/ ORIG REF: 003/ OTH REF: 006/ ATD PRESS: 5043

Card 2/2

ACC NR: AP6029139 SOURCE CODE: UR/0048/66/030/006/1076/1078

AUTHOR: Bondarev, D.Ye.

ORG: none

TITLE: Magnetochemical nature of the changes in the magnetic properties of ferrites caused by the introduction of activator ions [Report, All-Union Conference on the Physics of Ferro- and Antiferromagnetism held 2-7 July 1965 in Sverdlovsk]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 6, 1966, 1076-1078

TOPIC TAGS: ferrite, manganese compound, magnesium compound, magnetic property, memory core

ABSTRACT: The problem of producing low induction manganese magnesium ferrites having low magnetic viscosity, high electric resistivity, high readout signal to noise ratio and low switching power, and therefore suitable for use in fast magnetic memory elements, is discussed very briefly. The radii, magnetic moments, ionization potentials and lattice affinities (tendency to enter the tetrahedral or octahedral sublattice) of 14 possible activator ions are tabulated. A family of ferrites having the composition $(Mn, Mg)_{1+a}Fe_2 - (a+b)(Sc, Cr)_b O_4$ with a and b ranging from 0.0025 to 0.25 has been described in patent disclosures by D.Ye. Bondarev and Yu.V.Basikhin (Avtorskoye svidetel'stvo No. 134347, 1960; French patent No. 1308361, 1962; Italian patent No. 662740, 1964). The compositions of four of these materials are tabulated;

Card 1/2

ACC NR: AP6029139

curves of reciprocal switching time versus switching field are given for four of them (not the same four, but there is some overlap); the characteristics S_w (in Oe microsec) B_r (in Gs), and H_c (in Oe) are tabulated for four of the materials; and flux characteristic curves for memory cores of two of the materials are presented. It is concluded that the most suitable materials for fast memory cores are the types HS -2M, HS-2, and HS-8 ferrites. Of these three materials, two are among the four whose compositions are given. The compositions of these (by weight) are: HS-2, $640Fe_2O_3$-195MgO-103MnO--62Sc_2O_3; and HS-8, $577Fe_2O_3$-190MgO-104MnO-83Sc_2O_3-46Cr_2O_3. Orig. art. has: 2 figures and 3 tables.

SUB CODE: 20, 07, 09 SUBM DATE: 00 ORIG. REF: 005 : OTH REF: 004

Magnetic Materials 18

Card 2/2 nst

DEMIDOV, I.N.; BONDAREV, E.

High-speed heads equipped with cutters having hard alloy bits used without regrinding. Avt. prom. 29 no.8:39 Ag '63. (MIRA 16:11)

1. Minskiy avtomobil'nyy zavod.

BONDAREV, E.A. (Moskva); NIKOLAYEVSKIY, V.N. (Moskva)

Convective diffusion in porous media taking adsorption into account. PMTF no.5:128-134 S-O '62. (MIRA 16:1)
(Hydrodynamics) (Adsorption)

BONDAREV, E.A. (Moskva); NIKOLAYEVSKIY, V.N. (Moskva)

Mixing of liquid in an axisymmetrical pressure flow. Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.6:170-171 N-D '61. (MIRA 14:11)

(Hydrodynamics)

BONDAREV, E.A. (Moskva); SHKIRICH, A.R. (Moskva)

Experimental investigation of longitudinal and lateral convective diffusion in a porous medium. Izv. AN SSSR. Mekh. no.6:138-141 N-D '65. (MIRA 18:12)

"Experimental Results Concerning the Interaction of a Shock Wave with Turbulent Boundary Layers."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

ACCESSION NR: AT4042658 S/0000/63/000/000/0076/0078

AUTHOR: Bondarev, E. V.

TITLE: The effect of a changed gas medium on "primary potentials" in the auditory area of the brain cortex in animals and some functions of the auditory analyzer of man

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy* konferentsii. Moscow, 1963, 76-78

TOPIC TAGS: respiratory gas mixture, auditory analyzer, hypoxia, cat, imbedded electrode, pressure chamber, low barometric pressure, helium oxygen atmosphere

ABSTRACT: Interest in measuring the effects of moderate hypoxia and of various other respiratory gas mixtures on the auditory analyzer stems from the fact that in modern high altitude flights and in space flights a large part of the work load falls on the visual analyzer of the pilot. Experiments were performed to determine the feasibility of shifting part of the burden of visual information

Card 1/3

ACCESSION NR: AT4042658

to sound signals. Experiments were performed on seven cats with electrodes embedded into the auditory part of the cortex. Primary potentials were induced by short (80 msec) sound signals of 500, 1000, 3000, 6000, and 10,000 cps supplied 5 to 7 times per minute at constant intensity of 60 db. The cats were kept in pressure chambers. A control group was kept at sea-level atmosphere. A second group was "elevated" to 5000- and 8000-meter altitudes, with a thirty-minute plateau at 5000 meters. A third group was divided into three chambers filled with gas mixtures containing 11.2,7.2, and 6.8% of oxygen corresponding to elevations of 5000, 8000, and 9000 meters, respectively. A fourth group, was kept for 12 hours in a pressure chamber in which nitrogen was almost completely replaced by helium. Changes in the primary potentials of the auditory cortex began to appear at an "elevation" of 5000 meters and increased sharply at 8000 and 9000 meters. Hypoxia caused an increase in the latent period of primary potentials, accompanied by a progressive decrease of the amplitude of the negative phase. An elevation of 8000 meters caused an increase in amplitude and a shortening of the duration of the positive phase of the reaction. This was especially marked in responses to sounds of more than 6000 cps frequency. Animals held for 12 hours in a helium-oxygen mixture did not experience any substantial changes in the primary reactions of the auditory cortex. The second part of the experiment was

Card 2/3

ACCESSION NR: AT4042658

performed on 20 humans ranging from 18 to 28 years of age in a pressure chamber set at a 5000-meter altitude. Moderate hypoxia at a simulated altitude of 5000 meters raised the threshold of sensitivity to sound and caused some diminution in the clarity of words at a low decibel level. After conditioning to the 5000 meter altitude, these changes became less marked. The processing capacity of the analyzer and its interval of discreteness of the auditory analyzer at an altitude of 5000 meters did not change substantially.

ASSOCIATION: none

SUBMITTED: 27Sep63 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

Card 3/3

ACCESSION NR: AP4041820 S/0239/64/050/007/0779/0783

AUTHOR: Bondarev, E. V.

TITLE: Primary potentials evoked by acoustic stimuli from the cerebral cortex of the cat and their variation during hypoxia

SOURCE: Fiziologicheskiy zhurnal SSSR, v. 50, no. 7, 1964, 779-783

TOPIC TAGS: hypoxia, acoustic stimulus, electroencephalography, auditory analyzer, brain electrode, chronic electrode

ABSTRACT: The purpose of this investigation was to determine the stability of the auditory analyzer of animals during hypoxia. In two tests, 7 cats with electrodes chronically implanted in the auditory zone of the cerebral cortex and above the motor zone were investigated during normal and hypoxic conditions. The tests were designed to determine how cats responded to acoustic stimuli (60-db signals at 500—10,000 cps). In the first investigation, the cats were exposed to atmospheres composed of 11.2, 7.4, and 6.8% oxygen, which corresponded to altitudes of 5000, 8000, and 9000 meters.

Card 1/2

ACCESSION NR: AP4041820

In the second test, the animals were exposed to simulated barometric altitudes of 5000 and 8000 meters in a pressure chamber. All tests were conducted in soundproof chambers. The duration of each individual probe was 30 minutes, with acoustic stimuli being introduced after 10 minutes. Each cat was exposed to both tests 5—6 times, with 10-day intervals between exposures. For statistical reliability, 40—50 responses were recorded electroencephalographically for each acoustic frequency at each altitude. Results of the investigations showed that delays in primary responses from the auditory analyzer became detectable at 5000 meters and particularly significant at 8000 meters, especially during barometric tests. Under the same conditions, hypoxic cats showed depressed response to acoustic stimuli at frequencies over 6000 cps. The tests reflected the inhibitory effect of hypoxia on the auditory analyzer.

ASSOCIATION: Laboratoriya elektrofiziologii Kafedry* aviatsionnoy meditsiny* VMOLA im. S. M. Kirova, Leningrad (Electrofiziology Laboratory, Aviation Medicine Department, VMOLA)

SUBMITTED: 25Jul63 ATD PRESS: 3052 ENCL: 00

SUB CODE: LS NO REF SOV: 004 OTHER: 006

Card 2/2

OZEROV, Leonid Stepanovich; BONDAREV, F.F., red.; ZAKHARIKOV, A.N., red.izd-va; GOROKHOVA, S.S., tekhn.red.

[Struggle of the party for the socialist industrialization of the country and the preparation for the complete collectivization of agriculture, 1926-1929; materials for the course in the "History of the KPSU."] Bor'ba partii za sotsialisticheskuiu industrializatsiiu strany i podgotovku sploshnoi kollektivizatsii sel'skogo khoziaistva, 1926-1929 gody; materialy k lektsiiam po kursu "Istoriia KPSS." Moskva, Gos.izd-vo "Vysshaia shkola," 1960. 109 p. (MIRA 13:7)
(Russia--Industries) (Agriculture)

KARSHENBAUM, S.; BONDAREV, G.

Experience at the "Kalibr." Sots.trud 4 no.1:109-118 Ja '59.
(MIRA 12:2)

1. Nachal'nik otdela truda i zarabotnoy platy zavoda "Kalibr."
(Moscow--Machinery industry) (Wages)

YEROKHIN, P.P., inzh.; BONDAREV, G.P., inzh.

Contactless BMR-3 magnetic regulator. Prom.Arm. 5 no.1:34-36 Ja '62. (MIRA 15:2)
(Armenia--Governors (Machinery)) (Milling machinery)

BONDAREV, G., inzh.

The BES-2M noncontact electronic signal indicator. Prom. Arm. 6 no.11:40-43 N '63. (MIRA 17:1)

1. Kirovakanskiy nauchno-issledovatel'skiy institut "Avtomatika".

BONDAREV, G.

Use of ultrasonic instruments for determining the thickness of the fat back in live swines. Mias.ind.S.S.S.R. 33 no.6:37-38 '62. (MIRA 16:1)

1. Donskoy sel'skokhozyaystvennyy institut.
(Ultrasonic waves—Industrial applications)
(Swine breeding)

SHATALOV, V. F.; ZENKOVICH, V. P.; BONDAREV, G. A., LUNIN, N. T.

Swine - Diseases

Evaluating the efficacy of vaccines against swine erysipelas. Veterinariia. 29 No. 7 1952.

Monthly List of Russian Accessions. Library of Congress, October 1952. UNCLASSIFIED.

BONDAREV, G.I.

Hygienic aspects of some vegetable food products treated with vnuran (mercaptophos). Gig. i san. 23 no.8:78-79 Ag '58 (MIRA 11:9)

1. Iz kafedry gigiyeny II Moskovskogo meditsinskogo instituta imeni, N.I. Pirogova.
(SYSTOX--TOXICOLOGY)

PEREPELKIN, S.R.; BONDAREV, G.I.

Protective role of food in acute radiation injury of the organism. Med.rad. 4 no.12:53-59 D '59. (MIRA 13:5)

1. Iz radiobiologicheskoy laboratorii (zav. - doktor biolog.nauk S.R. Perepelkin) Moskovskogo nauchno-issledovatel'skogo instituta sanitarii i gigiyeny imeni F.F. Erismana.
(RADIATION PROTECTION)
(DIETS)

PROKOP'YEV, Vasiliy Platonovich; BONDAREV, G.I., red.; BUL'DYAYEV, N.A., tekhn.red.

[Hygienic aspects of public food service] Gigiena obshchestvennogo pitaniia. Izd.2., perer. Moskva, Gos.izd-vo med.lit-ry Medgiz, 1960. 218 p. (MIRA 14:7)
(Food handling)

BONDAREV, G.I.

Food products subjected to ionizing radiation and their suitability for use by man. Gig. i san. 25 no.4:92-96 Ap '60. (MIRA 13:8)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta sanitarii i gigiyeny im. F.F. Erismana Ministerstva zdravookhraneniya RSFSR.
(FOOD--PRESERVATION) (RADIATION STERILIZATION)

BONDAREV, G.I.

Effect of irradiated food products on the reproductive activity and progeny of rats. Vop. pit. 19 no. 6:18-22 N-D '60.
(MIRA 13:10)

1. Iz radiobiologicheskoy laboratorii (zav. - doktor biologicheskikh nauk S.R. Perepelkin) Moskovskogo nauchno-issledovatel'skogo instituta sanitarii i gigiyeny imeni F.F. Erismana.
(FOOD) (RADIATION—PHYSIOLOGICAL EFFECT) (REPRODUCTION)

PUSHKINA, Natal'ye Nikolayevna; BONDAREV, G.I., red.; ZAKHAROVA, A.I., tekhn. red.

[Vitamins in the Far North] Vitaminy na Severe. Moskva, Medgiz, 1961. 127 p. (MIRA 15:2)
(RUSSIA, NORTHERN—VITAMIN METABOLISM)

KOREPANOV, Aleksandr Georgiyevich; BONDAREV, G.I., red.; BALDINA, N.F., tekhn. red.

[Santiary control of food organizations in institutions for children and adolescents] Sanitarnyi kontrol' za organizatsiei pitaniia v detskikh i podrostkovykh uchrezhdeniiakh. Moskva, Medgiz, 1961. 142 p. (MIRA 15:4)

(FOOD HANDLING)

RUSIN, Nikolay Mikhaylovich; GNOYEVAYA, Vera Leont'yevna; BONDAREV, G.I., red.; SENCHILO, K.K., tekhn. red.

[Some problems in food hygiene in rural areas] Nekotorye voprosy gigieny pitaniia v sel'skoi mestnosti. Moskva, Gos. izd-vo med. lit-ry Medgiz, 1961. 146 p. (MIRA 14:7)
(RESTAURANTS, LUNCHROOMS, ETC.—SANTITATION)
(FOOD—ANALYSIS) (FOOD POISONING)

GRIGOR'YEVA, V.N.; SHEVCHENKO, M.G.; SHILLINGER, Yu.I., kand. med. nauk; ALEKSINA, L.I.; LEBEDEV, Yu.D., red.; SHTENBERG, A.I., prof.; BONDAREV, G.I., red.; LYUDKOVSKAYA, N.I., tekhn. red.

[Collection of directives on the control of chemical poisons used in agriculture] Sbornik ofitsial'nykh materialov po kontroliu za iadokhimikatami, primeniaemymi v sel'skom khoziaistve. Moskva, Medgiz, 1961. 439 p. (MIRA 15:4)

1. Gosudarstvennaya sanitarnaya inspektsiya SSSR (for Grigor'yeva, Shevchenko). 2. Institut pitaniya Akademii meditsinskikh nauk SSSR (for Shillinger). 3. Moskovskiy nauchno-issledovatel'skiy institut sanitarii i gigiyeny im. F.F.Erismana (for Aleksina).
(Agricultural chemicals)

MINKH, Aleksey Alekseyevich, prof.; BONDAREV, G.I., red.; VYTCHIKOVA, M.A., red.; ZUYEVA, N.K., tekhn. red.

[Methods for hygiene research]Metody gigienicheskikh issledovanii. 2., ispr. i dop. izd. Moskva, Medgiz, 1961. 482 p. (MIRA 16:1)

(PUBLIC HEALTH RESEARCH)

BUDAGYAN, Fadey Yervandovich, prof., red.; BONDAREV, G.I., red.;
BALDINA, N.F., tekhn. red.

[Tables of chemical composition and nutritive value of food products] Tablitsy khimicheskogo sostava i pitatel'noi tsennosti pishchevykh produktov, Moskva, Medgiz, 1961. 601 p.
(MIRA 14:12)

(Food--Analysis)

S/244/62/021/001/003/004
I016/I216

Author: Bondarev, G. I.

Title: HYGIENIC PROPERTIES OF SOME FOODSTUFFS STERILIZED BY α-RADIA γ-RADIATION

Periodical: *Voprosy pitaniya*, v. 21 no. 1, 1962, 61–64

Text: Irradiation of foodstuffs employed in the canning industry as a means of sterilization may change the chemical and organoleptic properties of the food. The organoleptic properties and toxicity of a number of feedstuffs irradiated with Co^{60} in a dose of 1,500,000r were therefore examined. The organoleptic properties were determined by tasting. Toxicity was tested by following the changes in body weight, composition of the formed elements of the blood, activity of same enzymes in the blood and feces (blood serum cholinesterose, blood plasma and feces alkaline phosphatase, blood catalose) and the blood sugar level in dogs fed for 11 months on irradiated food stored for various time periods. Beef, cod fillet, green peas and rye bread were examined. The organoleptic properties of these products changed considerably after irradiation, but no toxic effects were observed.

Association: Tsentral'nayanacuhno-issledovateliskaya laboratoriya gigieny vodnogo transporta, Moskva (The Central Research Laboratory of Hygiene of Water Transportation, Moscow).

Submitted: May 13, 1960

Card 1/1

POPOV, Garri Sergeyevich; RASTORGUYEV, Petr Vasil'kevich; STEN'KO, Yuriy Mikhaylovich; NOVIKOV, Teodor Nikitovich; BARKOV, G.D., red.; BONDAREV, G.I., kand. med. nauk, red.; MOSHAROVA, T.P., red.izd-va; TIKHONOVA, Ye.A., tekhn. red.

[Medical handbook for the ship's captain] Meditsinskii spravochnik kapitana. Pod obshchei red. G.D.Barkova. Moskva, Izd-vo "Morskoi transport," 1963. 213 p. (MIRA 16:5)

1. Direktor TSentral'noy nauchno-issledovatel'skoy laboratorii gigiyeny vodnogo transporta (for Barkov).
(MEDICINE, NAVAL—HANDBOOKS, MANUALS, ETC.)

BONDAREV, G.I.; ZINOV'YEV Ye.Sh.; NEPOKLONOV, Yu.A.; YENDOVITSKAYA, I.S.

Supply of vitamins C, B_1, B_2 and PP for fish processing workers on fishing craft in the North Atlantic. Vop. pit. 22 no.5:58-60 S-O '63. (MIRA 17:1)

1. Iz otdela gigiyeny pitaniya (zav. - kand. med. nauk G.I. Bondarev) TSentral'noy nauchno-issledovatel'skoy laboratorii gigiyeny vodnogo transporta, Moskva.

BONDAREV, G.I.; ZINOV'YEV, Ye.Sh.; NEPOKLONOV, Yu.A.; YENDOVITSKAYA, I.S.

Energy expenditure of fishery workers on trawlers fishing in the Barents Sea and North Atlantic. Vop. pit. 21 no.6:40-43 N-D '62. (MIRA 17:5)

1. Iz Tsentral'noy nauchno-issledovatel'skoy laboratorii gigiyeny vodnogo transporta, Moskva.

ZLOTNIKOV, David Samuilovich; BONDAREV, G.I., red.

[Preventive sanitary inspection in the food industry; general problems] Predupreditel'nyi sanitarno-pishchevoi nadzor; obshchie voprosy. Moskva, Meditsina, 1964. 198 p. (MIRA 17:9)

BONDAREV, G.I.; ODINTSOVA, V.D.

Comparative characteristics of the assimilability of beef subjected to freezing, heat sterilization and irradiation. Vop. pit. 23 no.1:81-82 Ja-F '64. (MIRA 17:8)

1. Iz TSentral'noy nauchno-issledovatel'skoy laboratorii gigiyeny vodnogo transporta, Moskva.